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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/686,682	10/11/2000	Atsushi Onoe	45100-02783	5819

20999 7590 06/23/2004

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EXAMINER	
PHAN, MAN U	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/686,682	ONOE ET AL.	
	Examiner	Art Unit	
	Man Phan	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-17 and 20* is/are rejected.

7)☒ Claim(s) *8,18 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment and Argument

1. This communication is in response to applicant's 05/13/2004 Amendment in the application of Onoe et al. for the "Transmitter, communication system, and communication method" filed 10/11/2000. This application claims foreign priority based on the application 11-289504 dated 12/10/1999 filed in Japan. The proposed amendment to the claims and response have been entered and made of record. Claims 3, 11, 12 have been amended. Claims 1-20 are pending in the present application.

The corrected or substitute drawing were received on May 13, 2004. These drawing are accepted, and has been approved by the examiner.

In view of applicant's amendment to submit a new abstract. Therefore, examiner has withdrawn the Objections of record to the abstract of the disclosure.

The rejection of record with respect to claims 3 and 11, 12 under 35 U.S.C. § 112, second paragraph are hereby removed based on applicant's amendment.

2. Applicant's amendment and argument to the rejected claims are insufficient to distinguish the claimed invention from the cited prior arts or overcome the rejection of said claims under 35 U.S.C. 103 as discussed below. Applicant's argument with respect to the pending claims have been fully considered, but they are not persuasive for at least the following reasons.

3. Applicant's argument with respect to the rejected claim 1 (page 10, first paragraph) that the cited references do not disclose *"guaranteed bandwidth set in advance, adding a first identifier when the data is transmitted without exceeding the guaranteed bandwidth, a second identifier when the data is transmitted exceeding the guaranteed bandwidth"*. However, Taniguchi (US#6,222,841) is applied herein merely for the teaching of a data transmission system which can realize dynamic bit rate control corresponding to the available network bandwidth, utilizing a streaming shaping unit for determining transmission based on the packet identifier. The stream shaping processing means comprises table generation means for generating a filtering information table in which a correspondence between the packet identifier included in the header of each packet of the encoded stream generated by the stream coding means, and packet priority is registered, and filtering discrimination means for discriminating transmission or abandonment of each of the packets with reference to the filtering information table generated by the table generation means on the basis of the packet identifier included in the header extracted from each packet in the encoded stream to be transmitted (See Fig. 4, and Col. 12, lines 1-15). Taniguchi further teaches in Fig. 1 a block diagram illustrated the outline of a data packet transmission in which the stream structure prescribes packetizing of a stream in units of encoded data, cyclical insertion of control packets indicating coding cycles into a stream, and a packet header format (*packet identifier also serving as a packet priority level*). The stream shaping processing unit 02 performs stream shaping processing (*bit rate control method for guaranteed bandwidth*) for an encoded stream, which is input from an input unit 00 and stored in the external storage unit 08, by packet filtering using packet identifiers, which also serve as packet priority levels and are added to the headers of the individual packets (*an identifier adding*

means for determining transmission based on the packet identifiers). The stream shaping processing unit 02 determines in accordance with the priority assigned to each packet identifier registered in a table 03 if each packet is to be abandoned or transmitted (*based on the guaranteed bandwidth set in advance or corresponding to the available network bandwidth*). To allow bit rate control by numerical value designation, the stream shaping processing unit 02 preferentially transmits packets in the order from those having higher priority levels within the range of the available network bandwidth on the basis of the correspondence between the packet identifiers and priority levels registered in the table 03, and increases the number of packets to be transmitted within the allowable range (*Packet identifiers serve as the packet priority level, in which the highest priority transmitted without exceeding the guaranteed bandwidth, and the lower priority level transmitted with exceeding the guaranteed bandwidth*) (Col. 3, lines 23 plus and Col. 7, lines 16 plus). Furthermore, Ohba et al. (US#6,501,760) discloses a basic scheme of a framework called Differentiated Service (DS), in which a subscribed rate is specified between a user and a network or between two neighboring management networks (domains), and packets are marked as high priority packets while the transmission rate is less than or equal to the subscribed rate, or as low priority packets when the transmission rate exceeds the subscribed rate, according to a relationship between the subscribed rate and the monitored packet transmission rate (*for guaranteed bandwidth set in advance*). Then, the high priority packets are handled with priority over the low priority packets within the network or domain so as to provide different QoSs (*high priority without exceeding the guaranteed bandwidth, and low priority with exceeding the guaranteed bandwidth set*). Here, the marking is done by attaching (writing) an information indicating the priority level to the packet (*packet identifier for deciding whether or*

not the packet data is transmitted in high or low priority)(Col. 7, lines 38 plus). In the same field of endeavor, Carter et al. (US#6538,989) discloses a packet network, in which a host element for use in association with a packet network comprising: means for generating packet based flows and for associating each flow with a respective selected associated first or second class of service (*packet identifiers serve as packet priority levels*); a first packet buffer arranged to receive packets associated with the first class of service (*first PID*); means for controlling the first packet buffer size (*for guaranteed bandwidth*); a second packet buffer arranged to receive packets associated with the second class of service (*second PID*); and means for directing packets from the first and second packet buffers to an output arranged to ensure that the first class packet flow rate does not exceed a selected peak rate bandwidth (*guaranteed bandwidth*) (Col. 4, lines 14 plus and Col. 21, lines 4 plus). Therefore, the Examiner maintains that the references cited and applied in the last office actions for the rejection of the claims are maintained in this office action.

Claim Rejections - 35 USC ' 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 1038 and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-3, 6-7 and 9-12, 15-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi (US#6,222,841) in view of Ohba et. (US#6,501,760).

With respect to claims 1, 6-7 and 9, 15-17, both Taniguchi (US#6,222,841) and Ohba et al. (US#6,501,760) disclose a novel method and system for the transfer of packet data utilizing priority control and admission control, according to the essential features of the claims. Taniguchi provides a data transmission system for transmitting an encoded stream via a network, has a video transmission unit having a stream coding unit for generating an encoded stream which is packetized in units of abandonable data, and in which a header including a packet identifier also serving as packet priority is added to each packet, and a stream shaping processing unit for determining transmission or abandonment of each packet in the encoded stream generated by the stream coding unit using the packet identifier included in the header of each packet in accordance with the designated bit rate. With this arrangement, even when the available network bandwidth changes during transmission of an encoded stream, it is checked at

cycles discriminated based on the control packets if the current bit rate corresponds to the available network bandwidth, and control is made to sequentially and preferentially transmit packets in the order from those with higher priority levels based on the packet priority levels within the allowable range, thus dynamically coping with changes in network bandwidth (Col. 2, lines 53 plus). Taniguchi further teaches in Fig. 1 a block diagram illustrated the outline of a data packet transmission in which the stream structure prescribes packetizing of a stream in units of encoded data, cyclical insertion of control packets indicating coding cycles into a stream, and a packet header format (packet identifier also serving as a packet priority level). The stream shaping processing unit 02 performs stream shaping processing (bit rate control method) for an encoded stream, which is input from an input unit 00 and stored in the external storage unit 08, by packet filtering using packet identifiers, which also serve as packet priority levels and are added to the headers of the individual packets. Thereafter, the unit 02 transmits a stream onto the network via a transmission unit 04. Upon executing the stream shaping processing, the stream shaping processing unit 02 determines in accordance with the priority assigned to each packet identifier registered in a table 03 if each packet is to be abandoned or transmitted. To allow bit rate control by numerical value designation, the stream shaping processing unit 02 preferentially transmits packets in the order from those having higher priority levels within the range of the available network bandwidth on the basis of the correspondence between the packet identifiers and priority levels registered in the table 03, and increases the number of packets to be transmitted within the allowable range. As for packets having identical priority within a single cycle, it is determined that the leading one of these packets has higher priority (Col. 7, lines 16 plus).

In the same field of endeavor, Ohba et al. (US#6,501,760) teaches a node device for transferring packets by attaching priority information (packet identifier), a node device for processing packets attached with priority information, and a packet transfer method using priority information attached to packets. Ohba discloses a mechanism for a packet transfer scheme in which a marking information by writing the priority information according to criteria of the own node into a region in a packet (adding packet ID corresponded to the predetermined bandwidth) into which the own node is allowed to write the priority information among the plurality of regions to which the priority information can be written, and transmitting that packet to a next hop node while maintaining the priority information in the other regions as received (Col. 3, lines 7 plus).

Regarding claim 20, this is a method claims corresponding to the apparatus claims above. Therefore, claim 20 is analyzed and rejected as previously discussed with respect to claims 1&9.

One skilled in the art would have recognized the need for effectively and efficiently performing packet communication in a packet network with guaranteed bandwidth, and would have applied Ohba's teaching of a mechanism for a packet transfer scheme into Taniguchi's novel use of stream shaping processing unit utilizing header including packet identifier. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Ohba's node device and packet transfer method using priority information in plural hierarchical levels into Taniguchi's data transmission system and method with the motivation being to provide a method and system for performing packet communication in a packet network.

7. Claims 4-5 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi (US#6,222,841) in view of Ohba et al. (US#6,501,760) as applied to the claims above, and further in view of carter et al. (US#6,538,989).

With respect to claims 4-5 and 13-14, Taniguchi and Ohba et al. disclose the claimed limitations as discussed in paragraph 10 above. Taniguchi and Ohba et al. do not disclose the use of token bucket shaper in the packet transmission. In the same field of endeavor, Carter et al. (US#6,538,989) discloses a traffic shaping in packet network using token bucket traffic descriptors in the connection admission control (CAC) algorithm and scheduling schemes like Weighted Fair Queuing (WFQ). When the shaping process used ensures that the instantaneous peak rate never exceeds the specified peak-rate, this is referred to as strict peak rate shaping (See Figs. 6(a) and 6(b) which show a qualitative comparison between flows produced by token bucket and peak-rate shaping for a particular instantaneous fill of the bounded delay buffer). Thus, the implement strict peak-rate shaping using a token bucket shaper provided an appropriate bucket size is used in conjunction with a different scheduling rule than presently used. For example, if there is a specified maximum allowed packet size for the bounded delay class, then peak-rate shaping would be achieved using a bucket size equal to the maximum allowed packet size in conjunction with the rule that no packets can be sent until the token bucket is full. Once the bucket is full, then the buffer is played out until either the token bucket is emptied or the buffer is emptied. No more packets are then sent until the token bucket is completely full again, and so on (Col. 17, lines 50 plus and Col. 19, lines 41 plus).

One skilled in the art would have recognized the need for effectively and efficiently performing packet communication in a packet network with guaranteed bandwidth, and would

have applied Carter's shaping process with token bucket traffic descriptors in the CAC algorithm, and Ohba's teaching of a mechanism for a packet transfer scheme into Taniguchi's novel use of stream shaping processing unit utilizing header including packet identifier. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Carter's packet network and Ohba's node device and packet transfer method using priority information in plural hierarchical levels into Taniguchi's data transmission system and method with the motivation being to provide a method and system for performing packet communication in a packet network.

Allowable Subject Matter

8. Claims 8 and 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is an examiner's statement of reasons for the indication of allowable subject matter: The prior art of record fails to disclose or suggest wherein further provision is made of a registering means for registering identifiers corresponding to packet data to be transferred without exceeding the set guaranteed bandwidth and guaranteed bandwidth thereof, as specifically recited in claims 8 and 18.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Regache (US#5,579,312) is cited to show the method and apparatus for scheduling the transmission of cells of guaranteed bandwidth virtual channels.

The Barbas et al. (US#6,233,240) is cited to show the event based rate policing with a jumping window.

The Weaver et al. (US#5,995,487) is cited to show the method and apparatus for providing subscribers with un-guaranteed bandwidth connections wherein subscribers are alerted by encoded messages or a warning tone.

The Aimoto (US#6,570,876) is cited to show the packet switch and switching method for switching variable length packets.

The Belser et al. (US#6,151,324) is cited to show the aggregation of MAC data flows through pre-established path between ingress and egress switch to reduce number of number connections.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION THIS ACTION IS MADE FINAL**. See MPEP ' 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (703)305-1029. The examiner can normally be reached on Mon - Fri from 6:30 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (703) 308-6602. The fax phone number for the organization where this application or proceeding is assigned is (703)305-3988.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Mphan

06/18/2004.

Man U. Phan

MAN PHAN
PATENT EXAMINER